SANTA CRUZ BIOTECHNOLOGY, INC.

saposin A (S-16): sc-27007

BACKGROUND

The saposin family includes four structurally related activator proteins, saposin A, B, C and D, that are cleaved from the single precursor protein prosaposin. The gene encoding human prosaposin maps to chromosome 10. Prosaposin is synthesized as a protein that is posttranslationally modified to a shorter form and then further glycosylated to yield a secretory product. This form subsequently undergoes partial proteolysis to produce saposin A, B, C and D. Each saposin family member acts in conjunction with hydrolase enzymes to facilitate the breakdown of glycosphingolipids within the lysosome. The saposins modify the environment of target lipids to make them accessible to the active sites of specific enzymes. Saposin A and C are involved in the hydrolysis of glucosylceramidase and defects in saposin C are linked to Gaucher's disease. Saposin B facilitates the hydrolysis of the sulfate group from cerebroside sulfate and defects in this protein are responsible for a form of metachromatic leukodystropy, a progressive neurodegenerative condition. Saposin D may stimulate the hydrolysis of sphingomyelin and ceramide, but its exact physiological role is not clear.

REFERENCES

1. Schnabel, D., et al. 1991. Mutation in the sphingolipid activator protein 2 in a patient with a variant of Gaucher's disease. FEBS Lett. 284: 57-59.
2. O'Brien, J.S., et al. 1991. Saposin proteins: structure, function, and role in human lysosomal storage disorders. FASEB J. 5: 301-308.
3. Suzuki, Y. 1995. Disorders of sphingolipid activator proteins. Nippon Rinsho 53: 3025-3027.
4. Vaccaro, A.M., et al. 1997. Effect of saposins A and C on the enzymatic hydrolysis of liposomal glucosylceramide. J. Biol. Chem. 272: 16862-16867.
5. Tatti, M., et al. 1999. Structural and membrane-binding properties of saposin D. Eur. J. Biochem. 263: 486-494.
6. Zhao, Q., et al. 2000. Identification of a novel sequence involved in lysosomal sorting of the sphingolipid activator protein prosaposin. J. Biol. Chem. 275: 24829-24839.
7. Fluharty, C.B., et al. 2001. Comparative lipid binding study on the cerebroside sulfate activator (saposin B). J. Neurosci. Res. 63: 82-89.
8. Ahn, V.E., et al. 2004. Crystal structure of saposin B reveals a dimeric shell for lipid binding. Proc. Natl. Acad. Sci. USA 100: 38-43.

CHROMOSOMAL LOCATION

Genetic locus: PSAP (human) mapping to 10q22.1; Psap (mouse) mapping to 10 B4.

SOURCE

saposin A (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of saposin A of human origin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-27007 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

saposin A (S-16) is recommended for detection of saposin A of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

saposin A (S-16) is also recommended for detection of saposin A in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for saposin siRNA (h): sc-44456, saposin shRNA Plasmid (h): sc-44456-SH and saposin shRNA (h) Lentiviral Particles: sc-44456-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.